

REMARKS

The Office Action dated May 28, 2009, has been received and carefully considered. Claims 1-10 are currently pending. Claims 1, 2, 4, 5, 7 and 8 are rejected. Claims 1, 2, 4, 5, 7, 8, and 9 have been amended. Claim 10 has been added. Claims 3 and 6 have been cancelled without prejudice or disclaimer to the subject matter contained therein. No new matter has been added. Reconsideration of the current rejections in the present application is respectfully requested based on the following remarks.<sup>1</sup>

I. THE SPECIFICATION

The disclosure is objected to because of an informality. This informality has been corrected in the above-indicated amendment to the specification.

Claims 5 and 8 are objected to because of informalities, which have been corrected with claim amendments.

Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 7 has been amended and is now presented in independent form.

In view of the above, it is respectfully requested that the objections to the specification be withdrawn.

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<sup>1</sup> As Applicant's remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicant's silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (*e.g.*, assertions regarding dependent claims, whether a reference constitutes prior art, whether references are legally combinable for obviousness purposes) is not a concession by Applicant that such assertions are accurate or such requirements have been met, and Applicant reserves the right to analyze and dispute such in the future.

## II. THE OBVIOUSNESS REJECTIONS OF CLAIMS 1-2, 4-5 AND 7-8

On page 3 of the Office Action, claims 1-2, 4-5 and 7-8 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 5,648,930 to Randazzo in view of U.S. Patent No. 4,573,144 to Countryman, Jr. ("Countryman"). This rejection is hereby respectfully traversed.

Under 35 U.S.C. § 103, the Patent Office bears the burden of establishing a prima facie case of obviousness. In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). There are four separate factual inquiries to consider in making an obviousness determination: (1) the scope and content of the prior art; (2) the level of ordinary skill in the field of the invention; (3) the differences between the claimed invention and the prior art; and (4) the existence of any objective evidence, or "secondary considerations," of non-obviousness. Graham v. John Deere Co., 383 U.S. 1, 17-18 (1966); see also KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727 (2007). An "expansive and flexible approach" should be applied when determining obviousness based on a combination of prior art references. KSR, 127 S. Ct. at 1739. However, a claimed invention combining multiple known elements is not rendered obvious simply because each element was known independently in the prior art. Id. at 1741. Rather, there must still be some "reason that would have prompted" a person of ordinary skill in the art to combine the elements in the specific way that he or she did. Id.; In re Icon Health & Fitness, Inc., 496 F.3d 1374, 1380 (Fed. Cir. 2007). Also, modification of a prior art reference may be obvious only if there exists a reason that would have prompted a person of ordinary skill to make the change. KSR, 127 S. Ct. at 1740-41.

Regarding claim 7, the Examiner assesses present claims 1 and 7 as being obvious in view of Randazzo when combined with Countryman. After carefully considering the Examiner's reasoning we respectfully disagree for the following reasons.

Claim 1 has the limitation of claim 3 as allowed by the examiner.

According to amended independent claim 7 the claimed invention relates to a programming of a non-volatile latch using hot electron injection transistors. Among others, the configuration of the memory device comprises two branches, each of which includes a driver and a load, wherein the driver or the load includes a read transistor having a control gate and an associated floating gate portion. Furthermore, each branch comprises a program transistor having a control gate and a corresponding floating gate portion, wherein the floating gate portions of the read transistor and the program transistor represent a shared floating gate. Furthermore, the input of the memory cell is specified as being the drain terminal of the program transistor.

From the above highlighted features it is implicitly clear that the read transistor and program transistor are distinct transistor elements, thereby also defining distinct input and output nodes, as it is explicitly disclosed that the control gate of the read transistor is connected **to the output node** of the other branch.

Based on this configuration (claim 7) the non-volatile latch of the present invention may be formed in a very compact arrangement since the number of transistors that have to operated at the high programming voltage may be reduced, since, for instance, **only the program transistor** of a branch has to be provided as high voltage transistor.

When starting from the technical problem of reducing the size of a non-volatile latch, the above-cited prior art documents would not provide obvious guidance so as to arrive at the solution of claim 7.

**Randazzo** describes a non-volatile memory, in which a floating gate transistor may be used as a storage element. In Fig. 5, referred to by the examiner, a configuration of a memory cell with depletion protection is described, in which the cross-coupled inverters have a different configuration as compared to the branches I and II of the present invention. In this document, a p-channel transistor, a floating gate transistor and an n-channel transistor are connected in series in each inverter of the memory cell, wherein the floating gate transistor acts as a 'read' transistor and a 'program' transistor, thereby requiring the application of high voltages to each of the transistors in each inverter.

Thus, when considering this document in view of the technical problem to be solved, there is no technical advice as to how this problem could be overcome.

When comparing the memory device of this **Randazzo** document with the latch of amended claim 7, it is to be noted that a separate read transistor and a separate program transistor is not described in this document. Furthermore, the electrical interconnection of the control gates of the read and program transistors and of the floating gate and the drain of the program transistor is thus clearly different from the configuration as claimed in amended claim 7. Even if one were to ignore the distinct nature of the read and program transistors, as is the case in the pending Office Action, the remaining difference of the memory structures would still prevent the skilled person from arriving at the limitations of claim 7, even when considering the teaching of **Countryman**.

This **Countryman** document relates to a programmable link, in which transistors or devices with a **common** floating gate are used. For this purpose, a programming transistor and a link transistor are provided so as to have a shared floating gate. Hence, the link transistor,

providing for a conductive path or a non-conductive path, respectively, may be set by the programming transistor.

For example, in Fig. 3 a general circuit configuration of the link transistor and the programming transistor is shown, however, without giving any information about the interconnections of the control gates and the drain and source terminals of these transistors. In Fig. 4 a circuit is illustrated, in which the control gates of the link transistor and the programming transistor are connected to each other. Furthermore, in Figs. 5, 7 and 8 other circuit diagrams are shown, in which the link transistor is provided without a control gate.

Thus, if one were to combine the technical teachings of Randazzo and Countryman, that is, using a programming transistor (as link transistor) configuration in combination with the memory cell of Randazzo, there is no technical motivation as to how the double transistor configuration of Countryman could be applied to the memory cell having **the single transistor for read and program** in order to obtain the configuration of the interconnect scheme of the claimed invention in claim 7, for instance in terms of the input and output node and the drain terminal of the programming transistor.

At least with respect to the link transistor Countryman provides various approaches, none of which results in a configuration according to claim 7. For instance, the configuration with the control gates of the link transistor and the programming transistor connected to each other would not solve the problem of the present invention. The configuration without a control gate in the link transistor would clearly be different from the present solution, while a configuration as described with reference to Fig. 3 would provide no information as to how this configuration could be implemented into the memory of Randazzo without inventive activity

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 7-8 be withdrawn.

### III. ALLOWABLE SUBJECT MATTER

Claims 3 and 9 are objected to as being allegedly dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In accordance with the Examiner's indication of allowable subject matter, independent claim 1 has been amended to include the subject matter from previous claim 3. Also, now-independent claim 9 has been amended to include the subject matter from previous claims 9, 2, and 1.

In view of the foregoing it is respectfully requested that the aforementioned obviousness rejections to claims 1, 2, 4, 5, 9, and 10 are moot in view of the claim amendments. As such, it is respectfully submitted that the claims are now in condition for allowance.

IV. CONCLUSION

Reconsideration and allowance are respectfully requested. In view of the foregoing, it is respectfully submitted that the present application is in condition for allowance, and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number, in order to expedite resolution of any issues and to expedite passage of the present application to issue, if any comments, questions, or suggestions arise in connection with the present application.

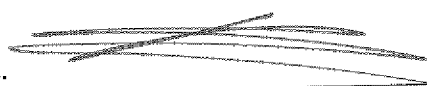
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Respectfully submitted,

Date:

11/30/2009

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